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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/708,498	11/09/2000	Katsunori Kawano	100390.01	4183

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

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DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/708,498

Applicant(s)

KAWANO ET AL.

Examiner

Martin J Angebranndt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The response of the applicant has been read and given careful consideration. Responses to the arguments of the applicant are presented after the first rejection to which they are directed. **The examiner notes that the applicant has not perfected priority and recommends that they do so at the earliest opportunity.** Rejection of the previous office action are withdrawn based upon the arguments of the applicant and that it is not clear that the medium of JP 03-075789 can record both polarization and intensity holograms.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 03-075789, in view of JP 03-149660 (cited in advisory action communication) and Ono JP 09-269719.

JP 03-075789 teaches two different methods for writing information holographically in figures 6 and 7. In figure 7, an optically based spatial light modulator (29') is used together with a polarizing beam splitter prism (32) so that only the light reflected by the SLM (29') and reflected by the polarizing beam splitter (32) to the holographic recording medium (3) is only in one polarization. In figure 6, a spatial light modulator is used, but it is not clear if element (29) uses changes in polarization to modulate the beam.

Ono JP 09-269719 describes the embodiment of figure 3, where two different holograms simultaneously where the reference beams are orthogonally polarized. [0019-0021]. In the case

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of the simultaneous recording a reference beam in each polarization is present for each of the object beams and four holograms are recorded. Two are the conventional holograms corresponding to the intensity modulated holograms of the instant specification and two polarization holograms observable only with polarizing means.

JP 03-149660 teaches the reading of the holographic data using polarization measurement, where the light polarized in a single direction by element 22 is modulated by a polarizing spatial light modulator (18). The readout means of figure 1 is similar to that of figure 1 of JP 03-075789.

If it is determined that the SLM (29) of figure 6 does not modulate the polarization, the examiner holds that position that it would have been obvious to one skilled in the art to modify the process of JP 03-075789 to record images using a polarization SLM as taught by JP 03-149660 in place of the SLM (29) in the process of using the apparatus of figure 6 to simultaneously record areas of an intensity hologram and areas being a polarization hologram based upon the direction within JP 03-075789, in view of JP 03-149660 and Ono JP 09-269719 to use polarization measurement in reading and/or recording holograms.

The examiner notes that in the case of JP 03-075789 and Ono JP 09-269719, only one reference beam is used. The examiner notes that when the object beam is modulated with a polarization SLM, the angles between the beams are somewhat fixed/limited, reducing the range of angular multiplexing achievable.

The applicant states that Ono JP 09-269719 is not available as prior art on page 3 of the response. **This is incorrect until priority is perfected.** Once the applicant has submitted a certified translation of the priority documents and these have been found by the examiner to

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enable the current claims, the rejection will be withdrawn. The claims are directed to the medium with the holograms recorded therein. The criticality of the mode of recording has not been shown in the record. Clearly the polarization prism (32) limits light to one polarization and the polarization of the light reflected from the spatial light modulating element is modulated in its polarization in accordance with the image of the object based upon the translation on page 19. Therefore it is clear that both polarizations are present in the beam reflected by 29' and incident upon the medium 3, but it is not clear that the medium of over JP 03-075789 is able to record both types of holograms. The applicant argues that it is not the case, but fails to provide any of the underlying reasoning. Clearly it would be advantageous to modify the process of over JP 03-075789 by using materials able to record both types of holograms based such as those taught by JP 03-149660 and Ono JP 09-269719 to record the different holograms in spatially different portions of the medium. The applicant argues that the claims are directed to the medium, not data retrieval, but ignores the fact that all the prior art is in the holographic field and therefore analogous. The rejection stands.

4. Claims 1,2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 03-075789, JP 03-149660 and Ono JP 09-269719, in view of Todorov, L., et al., Polarization Holography. 2: Polarization holographic gratings in photoanisotropic materials with and without intrinsic birefringence", Appl. Opt., Vol. 23(24) pp. 4588-4591 (12/1984).

Todorov, L., et al., Polarization Holography. 2: Polarization holographic gratings in photoanisotropic materials with and without intrinsic birefringence", Appl. Opt., Vol. 23(24) pp. 4588-4591 (12/1984) exemplifies the recording of polarization holograms using Methyl Orange (4[[[(4-dimethylamino)phenyl]azo]benzene sulfonate) with polyvinyl alcohol as the recording

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medium and polarized argon ion laser beams. This includes the recording of conventional holograms where the linear polarizations of the recording light are parallel or orthogonal as shown in figure 1 and table 1.

It would have been obvious to one skilled in the art to modify the process of JP 03-075789 combined with JP 03-149660 and Ono JP 09-269719 by using the holographic recording materials of Todorov, L., et al., Polarization Holography. 2: Polarization holographic gratings in photoanisotropic materials with and without intrinsic birefringence", Appl. Opt., Vol. 23(24) pp. 4588-4591 (12/1984) based upon the disclosure that the materials of Todorov, L., et al., Polarization Holography. 2: Polarization holographic gratings in photoanisotropic materials with and without intrinsic birefringence", Appl. Opt., Vol. 23(24) pp. 4588-4591 (12/1984) are amenable to polarization holographic recording and the lack of materials disclosed in JP 03-075789, JP 03-149660 and Ono JP 09-269719 with a reasonable expectation of forming the desired holograms.

The claims stand rejected without further comment as no further arguments were directed at this rejection beyond those addressed above.

5 Claims 1,2,4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 03-075789, JP 03-149660 and Ono JP 09-269719, in view of Savant et al. '221.

Savant et al. describes polyethylene vinyl alcohol grafted with polyamide with various azo dyes dispersed therein in examples XIII-XX. The structure of these azobenzene dyes are shown in columns 9-18. The use of disks as the substrate are disclosed. (8/4-14 and 26/6-23 and examples described at 24/9-19). The recording of holograms including polarization multiplexing is disclosed. (25/46-26/5).

It would have been obvious to one skilled in the art to modify the process of JP 03-075789 combined with JP 03-149660 and Ono JP 09-269719 by using the holographic recording materials of Savant et al. '221 based upon the disclosure that the materials of Savant et al. '221 are amenable to polarization holographic recording and the lack of materials disclosed in JP 03-075789, JP 03-149660 and Ono JP 09-269719 with a reasonable expectation of forming the desired holograms.

The claims stand rejected without further comment as no further arguments were directed at this rejection beyond those addressed above.

6 Claims 1-3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over either JP 03-075789, JP 03-149660 and Ono JP 09-269719, in view of Natansohn et al. '381.

Natansohn et al. '381 describes polyesters with pendant azobenzenes. (4/40-5/64). The section entitled "Optical Image Recording" in column 7 evidenced the recording of polarization holograms in media containing both a polymer and a polymer containing an azobenzene structure. (7/38-8/12). The use of polyesters as the backbone is disclosed. (4/41-5/63).

It would have been obvious to one skilled in the art to modify the process of JP 03-075789 combined with JP 03-149660 and Ono JP 09-269719 by using the holographic recording materials of Natansohn et al. '381 based upon the disclosure that the materials of Natansohn et al. '381 are amenable to polarization holographic recording and the lack of materials disclosed in JP 03-075789, JP 03-149660 and Ono JP 09-269719 with a reasonable expectation of forming the desired holograms.

The claims stand rejected without further comment as no further arguments were directed at this rejection beyond those addressed above.

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7 Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 03-075789, JP 03-149660 and Ono JP 09-269719, in view of Eich et al. '784.

Eich et al. '784 discloses a mixture of isomerizable compounds (6/24-54). Polymeric liquid crystals including polyesters are disclosed, (7/27-9/34). The recording of information using an argon ion laser and the use of two polarized laser beams is disclosed. (14/59-15/29).

It would have been obvious to one skilled in the art to modify the process of JP 03-075789 combined with JP 03-149660 and Ono JP 09-269719 by using the holographic recording materials of Eich et al. '784 based upon the disclosure that the materials of Eich et al. '784 are amenable to polarization holographic recording and the lack of materials disclosed in JP 03-075789, JP 03-149660 and Ono JP 09-269719 with a reasonable expectation of forming the desired holograms.

The claims stand rejected without further comment as no further arguments were directed at this rejection beyond those addressed above.

8 The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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9 Claims 1-7 are rejected under the judicially created doctrine of double patenting over claims 1-47 of U. S. Patent No. 6,452,890 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: Claims 15 and 37-43 recite the holographic medium capable of recording both polarization and intensity modulated holograms and claims 16-17 recite the article with a polarization hologram formed within. Claims 1-7 recite the use of a polarization SLM in recording holograms in a polarization sensitive holographic recording medium.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

The applicant's position ignores the fact that claims to the recorded medium have been issued and that the instant claims have been substantially amended since that restriction to incorporate the limitations of the other groupings. Claim 16 specifically recites "said optical storage medium storing a hologram spatial polarization angle modulated datamultiplexed on the hologram by modulating a polarization direction of the signal beam." The cited claim and the instant claims are both directed to the recorded medium. The rejection stands as the claims have issued. **The examiner recommends that the applicant file the terminal disclaimer as soon as possible.**

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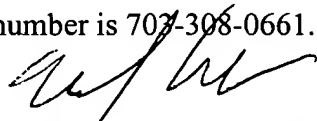
10 THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J Angebrannndt
Primary Examiner
Art Unit 1756

July 16, 2003